FACT SHEET

GROUNDWATER CLEANUP AT THE ROHM AND HAAS CHEMICALS LLC - RINGWOOD, ILLINOIS SITE

This fact sheet provides an overview of groundwater contamination in the vicinity of the Rohm and Haas Chemicals LLC (hereinafter Rohm and Haas) facility in the Village of Ringwood, McHenry County, Illinois. Rohm and Haas, and prior to that Morton International, Inc., have been working in coordination with the Illinois Environmental Protection Agency ("IEPA") and Illinois State Water Survey since Morton enrolled in the IEPA voluntary Site Remediation Program ("SRP") in December, 1991, to identify, monitor and clean up contaminated groundwater associated with historical chemical manufacturing operations at its facility and to ensure the protection of the local community and groundwater resources.

Residential Well Monitoring to Assure Safe Drinking Water

The groundwater wells at sixteen nearby residences in the vicinity of the facility and downstream from the flow path of groundwater contamination have been identified and homeowners contacted for regular sampling to insure their drinking water is safe. Sampling of these wells has been offered to residents and performed since 2000. Sampling consists of collecting groundwater from the wells and analyzing those samples according to EPA standards. The purpose is to know whether the chemicals detected in groundwater beneath the facility are present in area drinking wells. Results show that no chemicals associated with facility operations have been detected in these wells; naturally occurring chemicals have been detected at concentrations below guidelines established by IEPA.

Facility Description and History

Rohm and Haas' Ringwood manufacturing facility is located at 5005 Barnard Mill Road near its intersection with Ringwood Road. The facility and its 157 workers manufacture performance polymers, adhesives, resins, and sealants. The facility, originally built as a dairy operation in 1916, was converted to chemical manufacturing in the early 1940's, and was acquired by Morton around 1950. In 1999, Rohm and Haas purchased Morton, including its operation in Ringwood.

The facility consists of approximately 120 acres of land, of which approximately 90 acres is undeveloped farmland, marshy areas, and woodlands. Residences are located to the north, east, and west of the facility along Barnard Mill Road, North Richmond Road, and North Ringwood Road. An adjacent industrial manufacturing facility is located immediately to the south of the Rohm and Haas facility. To the southeast, the property is primarily undeveloped farmland, although some of the undeveloped property has been acquired by developers who are beginning to construct residences. The ground surface slopes gently to the southeast; groundwater also flows in that direction.

Chemicals in Groundwater

Several chemicals are present in groundwater beneath the facility. Some of these compounds, particularly metals, are naturally occurring or are found in uniform concentrations across the region, called background levels. Other compounds present in groundwater are typical of agricultural activities in the region. In addition, some chemicals are likely present as a result of historical operations at the Rohm and Haas facility and at other adjacent manufacturing operations.

From approximately 1961 through 1977, an on-site landfill basin was used for management of wastes at the facility. This landfill basin was closed and capped in 1978 with a clay-rich cap and vegetation, typical construction materials for a landfill cap. This cap was upgraded in 1987 to include a geotechnical liner, clay, and vegetative cover, which materials represent the current state of the art for landfill cap construction. The landfill cap is designed to minimize the infiltration of precipitation into the landfill, thereby reducing any contamination in groundwater. Since 1978, all wastes at the Rohm and Haas facility have been disposed of off-site. Based on the investigations described below, it is believed that the closed landfill/lagoon and an adjacent manufacturing facility were the primary sources of contaminants in the groundwater beneath and immediately adjacent to the facilities.

The chemicals primarily associated with Rohm and Haas facility operations that have been identified in groundwater at or near the facilities are ammonia nitrogen, chlorides, and several chlorinated compounds and their breakdown products.[1] Other chlorinated compounds are primarily associated with an adjacent manufacturing operation.[2] The groundwater from that facility mixes with groundwater from the Rohm and Haas facility, southeast from the facility. Under certain conditions in groundwater, these chlorinated compounds will break apart to form similar breakdown products, including vinyl chloride. Rohm and Haas' sampling program includes all of these chemicals and their breakdown products.

Assessing and Delineating Extent of Groundwater Chemicals

Environmental assessment activities were initiated at the site in 1984 following detection of elevated levels of ammonia-nitrogen and chloride in a facility water production well. Since then, Morton, and subsequently Rohm and Haas, have been working to monitor contamination in groundwater by installing and sampling an extensive network of monitoring wells at multiple depths, at the facility and off-site. The chemicals found in groundwater move with its flow, which is east southeastward in the immediate vicinity of the facility. Groundwater flow continues beneath Rohm and Haas' undeveloped parcel, generally following a southeastward-trend. Wells have been installed beyond the furthest extent of contamination, to delimit its extent. The current extent of the chemicals in groundwater at concentrations above IEPA groundwater standards is shown on the attached map; the area does not encompass any homes or residential

---

[1] These compounds include 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethene (1,2-DCE), 1,2-dichloroethane (1,2-DCA), 1,2-dichloropropane (1,2-DCP), benzene, vinyl chloride, and ethylene.

[2] Trichloroethene (TCE) and its breakdown products are present in groundwater at or near the facilities, but are primarily associated with an adjacent manufacturing operation.

wells, and is a considerable distance away from the residential communities to the south and southeast of the facilities.

Remedial Cleanup Actions

In 1989, after evaluating the nature and extent of the contamination, Morton installed three groundwater recovery wells and constructed a facility to treat the recovered groundwater. In 2002-2003, Rohm and Haas designed an extensive upgrade to the treatment facility, including new recovery wells. After Rohm and Haas received a modification of its wastewater discharge permit from IEPA, the new treatment system was placed online in the summer of 2005. This system is expected to enable complete capture and treatment of the contaminants from the closed lagoon, and to clean up the groundwater over time. Any contamination located beyond the remediation system is expected to biodegrade and attenuate naturally over time. Rohm and Haas continues to monitor the groundwater and assess the effectiveness of the capture and treatment system to ensure that contaminants do not move beyond the proposed "Groundwater Management Zone," or "GMZ". A GMZ is a three-dimensional region containing groundwater being managed for remediation. (35 Ill. Adm. Code 740.120).


ROHM AND HAAS CHEMICALS LLC
ROHM AND HAAS CHEMICALS LLC
MODINE MANUFACTURING
MCHENRY STATE BANK
UNKNOWN
BILL ANEST
WALTER BARON
EDWIN VOSS
MCHENRY PARK
CURTIS JOHNSON
BILL ANEST
Mc Cullom Lake